chimerism. Acute graft-versus-host disease occurred in 9 subjects (2 with grade I, 6 with grade II, 1 with grade III). Chronic graft-versus-host disease occurred in 8 subjects (5 limited, 3 extensive). The overall survival was 66% with a median follow up of 32 months. Four subjects died due to relapse of primary disease (2 leukemia subjects and 1 Omenn syndrome) and acinetobacter septicaemia (1). In conclusion, among malignant diseases, only the patient with chronic myeloid leukemia survived. Chimerism monitoring is essential for post-transplant management of persistent detectable recipient hematopoietic cells. The encouraging result in nonmalignant condition suggests the benefit of reduced transplant related toxicity and satisfactory engraftment.

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ALLOGENEIC BLOOD AND MARROW TRANSPLANTATION IN THALASSEMIA MAJOR CLASS 3: AN EXPERIENCE OF IRAN

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Objective: Our aim for this study was to describe the outcome of blood and marrow transplantation in patients with class 3 thalassemia major. **Method and patients:** Since December 1992 till October 2002, forty-three patients with thalassemia class 3 received blood and marrow transplantation from their HLA-identical siblings. Median age at time of transplantation was 8 years (age range = 3-17), Male/Female = 24/19. Twenty-eight patients received bone marrow and fifteen patients received peripheral blood stem cell transplantation. Conditioning regimen was cyclophosphamide 40 mg/kg/day (from day–5 to -1) and busulfan 4 mg/kg/day (from day –9 to -6). GVHD prophylaxis regimen was cyclosporine A 3mg/kg /day/iv (from day –2 to +5) then 12.5 mg/kg/day/po (from day +5) and methotrexate 10mg/m^2 (day +1), 6mg/m^2 (days +3, +6). **Results:** Median time of absolute neutrophil count $\geq 0.5 \times 10^9$ /L was on day +20 and Median time of platelet recovery $\geq 20 \times 10^9$ /L was on day +25. At present 34 out of 43 are alive and 9 patients died due to aGVHD, cGVHD, rejection, veno-occlusive disease, infection and the others. Thirty-two patients (74.4%) developed aGVHD (grade I = 9, grade II = 7, grade III = 11, grade IV = 5). Seventeen patients (39.5%) developed cGVHD (limited = 5, extensive = 12). Eight year disease free survival in class 3 and 2 were 71% and 63%, respectively (p = 0.3).Eight year overall survival in class 3 and 2 were 78% and 79%, respectively (p = 0.00). **Conclusion:** According to this study, for an acceptable outcome in thalassemia class3. We need better conditioning and GVHD prophylaxis regimens to decrease cardiopulmonary and liver complications. The results of blood and marrow transplantation showed that it is better than supportive therapy such as transfusion and desferal therapy.

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CELIAC DISEASE TRANSMITTED BY CORD BLOOD STEM CELL TRANSPLANTATION (CBST)

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Either BMT or CBST could transmit immune associated diseases such as diabetes mellitus, immune thrombocytopenic purpura and complex autoimmune diseases with Evan's syndrome and transverse myelitis. We observed the occurrence of Celiac disease a year following cord blood stem cell transplantation (CBST) for acute myelogenous leukemia (AML-FAB M2) in complete second remission (CR-2). Patient had not suffered celiac disease prior to CBST and none of family member suffered too. The cord donor was HLA-identical unrelated male donor with HLA types: A3, B7 (w6), DR (B1), DR (B5), HLA DQ A1.0501 and DQ B1.0201 alleles family history was not available for celiac disease. CBST complicated with grade 2 skin Graft versus Host Disease (GVHD), which responded to steroid therapy, a year post transplantation she developed persistent mucous diarrhea with tinge of blood associated with abdominal cramps, work up of infectious causes and studies for CMV enteritis were negative, colonsocopy revealed no GVHD, gastrointestinal symptoms persist and failed to respond to steroid and prograf therapy, duodenal and jejunal biopsy revealed subtotal villous atrophy with cryptic hyperplasia which was suggestive of celiac disease, in addition to, antigliadin IgA, IgG, reticulin IgA, and Endomysial IgA antibodies were elevated. She responded well to gluten-free diet and was symptom-free. Possible causes of her autoimmune illness were 1) transference of autoimmune cells from the donor and 2) patient's predisposition to autoimmune disease secondary to an dysregulated immune system because of myeloablative therapy. Celiac disease is intolerance to certain cereal grains causing small bowel villous atrophy and thus malabsorption. Specifically, the gliadin component of wheat, and the prolamin component of rye and barley are implicated in causing disease by binding to HLA-II class molecules in APC and hence elicit an immune reaction. Celiac disease is associated with an increased risk for non-Hodgkin lymphoma, especially of T-cell type. The propensity to develop T-cell non-Hodgkin lymphoma and transmission of celiac disease by CBST support T cell concept in celiac disease. Celiac disease is strongly associated with some HLA-class II types, including DQA1.0501, and DQB1.0201, in conjunction with the haplotypes A30, B18, DR3, DRw52, and DQ2. Autoimmune enteropathy should be considered in HLA-high risk patients with persistent diarrhea post Stem Cell Transplantation.

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A NOVEL CONDITIONING REGIMEN OF IMMUNE SUPPRESSION WITH CAMPATH-1H, FLUDARABINE AND MELPHALAN IN STEM CELL TRANSPLANTATION FOR NON-MALIGNANT DISORDERS

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Successful allogeneic stem cell transplantation (SCT) benefits many non-malignant disorders. Factors limiting successful transplantation for these conditions are lack of HLA matched donors, toxicities of conditioning, graft rejection, and graft versus host disease (GVHD). Based on the hypothesis that intense immunosuppression targeted at host lymphocytes would allow successful engraftment of stem cells irrespective of source, we used campath-1H, fludarabine and melphalan in a novel fashion as conditioning in a pilot transplant trial for non-malignant disorders. Campath-1H (48 mg total) was administered once daily over 3 days (-21, -20 and -19), fludarabine (30 mg/m^2/day) for 5 days (-8 to -4), and melphalan (140mg/m^2) on day -3. The timing of campath-1H was designed to deplete recipient lymphocytes and macrophages, without prolonged immunosuppression of the graft. GVHD prophylaxis was CSA or FK506 (tapered after 3 months), steroids (1 mg/kg) from day -7 (tapered after 1 month), and short course methotrexate (day +1 [10 mg/m^2], +3 and +6 [7.5 mg/m^2] except in cord transplants). Primary end points of the study were engraftment and treatment related mortality (TRM) at 100 days. The regime was tolerated well. The first 10 recipients are described in table 1. Several recipients with BM failure syndromes were transplanted after several platelet and PRBC transfusions, putting them at high risk for graft rejection. Median follow up was 4 months; range 1-18m. Neutrophils (ANC >500)/cu.mm) engrafted at 12 days (range 8-20d); platelets (>50K/cu mm) engrafted at 22 days (21-30d). Serial immune reconstitution studies revealed profound lymphopenia at 1 month (ALC; NK; T and B cells), recovering after the third month, normalizing at 9 months. Five are off steroids; 2 are off all immunosuppression. All had stable or improved disease parameters. Post transplant complications were predominantly infections. All CMV + recipients (n = 4) reactivated CMV in < 30 days but responded to preemptive therapy. Others included HHV6 (2) and bacterial (7). One UCB recipient developed grade 3 toxicity due to CMV disease and TTP, and died